Amendments of the Claims:

    A listing of the entire set of pending claims is submitted herewith per 37 CFR 1.121. This listing of claims will replace all prior versions, and listings, of claims in the application.

    1. (previously presented)   A method of decentralized medium access control in a communications network including a plurality of devices, comprising:

    dividing time into a sequence of at least one superframe; and

    a first device of said plurality of devices transmitting in the superframe at a target beacon transmission time (TBTT) a beacon frame that includes a reservation for a planned transmission by a sender device during the superframe.

    2. (previously presented)   The method of claim 1, wherein:

said first device is the sender of said planned transmission; and

further comprising:

        the sender including the reservation in a beacon frame in all superframes during which the reservation is active, and

        including, by a receiver device of the planned transmission, said reservation in a beacon frame in all superframes during which the reservation is active.

    3. (previously presented)   The method of claim 1, further comprising grouping the beacon frame transmitted by each of the plurality of devices into the superframe as at least one beacon period having a starting point at a beacon period start time (BPST) and followed by a data transmission phase.

    4. (previously presented)   The method of claim 1, further comprising prior to a new or a change of an existing reservation of the sender device, the sender device negotiating with a receiver device of the transmission that is planned during the reservation.

    5.   (previously presented)   The method of claim 4, said negotiation comprising:

an initiator device of the reservation transmitting a distributed reservation protocol (DRP)-Request message comprising at least one reservation description selected from the group consisting of

a starting time, and a duration signalled by means of BPST or TBTT offset,

a reservation period,

a bitmap indicating the reserved times,

at least one time slot number,

a priority,

a channel/hopping indicator, and

a code sequence; and

in response to said DRP-Request, said negotiation further comprises at least one receiver device of the reservation transmitting a distributed reservation protocol (DRP)-Response message that includes an indicator selected from the group consisting of the proposed reservation is accepted, the proposed reservation is rejected with an alternative reservation proposal and the proposed reservation is rejected without an alternative proposal.

6. (previously presented)   The method of claim 5, wherein the negotiation further comprises said at least one receiver device further including in said DRP-Response one of the items selected from the group consisting of at least one alternative available time proposal for the reservation and information of at least one alternative available time during the superframe.

7. (previously presented)   The method of claim 1, further comprising including in the beacon frame of the first device a starting time of the reservation relative to a reference point selected from the group consisting of the TBTT of the first device, the BPST of the beacon period in which the first device is transmitting the beacon frame, the beginning of the superframe, a time period of the superframe, and a time slot of the superframe.

8. (previously presented)   The method of claim 7, wherein:

the starting time of the reservation is given relative to said reference point in the next following superframe, in which said first device will transmit its next beacon frame; and

if proposed by the receiver device, the at least one alternative available time for the reservation is given relative to a reference point in the next following superframe, in which said receiver device will transmit its next beacon frame.

9. (previously presented) The method of claim 1, further comprising maintaining by each device of said plurality of devices a table of all planned reservations received or sent by the device.

10. (previously presented) The method of claim 1, further comprising:

a receiver device of said reservation sending a poll packet to the sender device;

upon receipt of the poll packet, the sender device sending at least one data packet to the receiver device; and

the receiver device acknowledging receipt of at least one data packet by transmitting an acknowledgement (ACK) packet.

11. (previously presented) The method of claim 1, further comprising:

defining said superframe as comprising a plurality of medium access time slots; and

defining a reservation as a starting time slot of said plurality of medium access time slots and a duration as a number of medium access time slots.

12. (previously presented) The method of claim 1, further comprising:

defining said superframe as comprising a plurality of time units; and

defining a reservation as a starting time in time units and a duration as a number of time units.

13. (previously presented) The method of claim 1, further comprising:

defining said superframe as comprising a plurality of medium access time slots; and

defining a reservation as at least one bit in a bitmap comprising at least one bit per each medium access time slot of said plurality of medium access time slots.

14.   (previously presented)   The method of claim 1, further comprising:

defining said superframe as comprising a plurality of medium access time slots; and

defining a reservation as at least one element selected from the group consisting of a reservation period, a reservation offset, a reservation period offset, a reservation duration, a bitmap of at least one medium access time slot and a type of reservation.

15.   (previously presented)   The method of claim 1 further comprising defining a reservation as one element selected from the group consisting of:

a plurality of reservations per superframe and valid for a single superframe,

a plurality of reservations per superframe and valid for a plurality of superframes,

single reservation per superframe and valid for a single superframe, and

single reservation per superframe and valid for a plurality of superframes.

16.   (previously presented)   The method of claim 6, wherein said at least one alternative available time for the reservation is signalled by means of an availability bitmap having at least one bit per time slot to indicate the availability of the time slot.

17.   (previously presented)   The method of claim 6, wherein said at least one alternative available time for the reservation is signalled by means of at least one element selected from the group consisting of reservation period, reservation offset, reservation period offset, reservation duration, bitmap having at least one bit per time slot to indicate the availability of the time slot.

18.   (previously presented)   The method of claim 2, further comprising implicitly negotiating the reservation using a first beacon frame of the sender device and a first beacon frame of the receiver device.

Appl. No. 10/597,543
Reply to non-final Office action of February 1, 2011

Page 6 of 13

19. (previously presented) The method of claim 1, further comprising including availability information in a beacon frame of a device.

20. (previously presented) The method of claim 5, further comprising the initiator device completing the negotiation with a transmission of a DRP Complete message.

21. (previously presented) The method of claim 5, further comprising the sender device terminating the reservation.

22. (currently amended) The method of claim 21, further comprising [[a]] the sender device terminating a reservation that was initiated by an explicit negotiation, by transmission of a termination command.

23. (previously presented) The method of claim 22, further comprising the receiver device acknowledging the termination command of a unicast stream by transmission of an Immediate Acknowledgment (Imm ACK) frame.

24. (previously presented) The method of claim 22, further comprising sending a termination command by all devices that had previously included the reservation in a beacon frame.

25. (previously presented) The method of claim 2, wherein the beacon frame of the transmitting and including comprises a distributed reservation protocol (DRP) information element (IE) that includes information regarding the position of at least one reservation in the superframe.

26. (currently amended) The method of claim 22, further comprising terminating a reservation by performing one selected from the group consisting of:
removing the reservation information element IE from a current beacon frame and all subsequent beacon frames, and

Appl. No. 10/597,543
Reply to non-final Office action of February 1, 2011

Page 7 of 13

setting the duration field of the reservation <u>information element</u> IE to zero in a current beacon frame and removing the reservation <u>information element</u> IE from subsequent beacon frames.

27. (previously presented) The method of claim 1, wherein:

the transmitting includes in the beacon frame information of a reservation selected from the group consisting of a starting point and duration, and a bitmap; and

the including is optional.

28. (previously presented) The method of claim 1, further comprising respecting the reservation by all devices receiving a beacon frame that includes the reservation.

29. (previously presented) The method of claim 1, further comprising:

including information on a direction of the planned transmission in the beacon frame; and

only devices within a transmission range of a receiver device respecting the reservation, in case of a unidirectional planned transmission.

30. (currently amended) The method of claim 25, wherein only the receiver device performs the including to include the reservation <u>information element</u> IE in the beacon frame.

31. (currently amended) The method of claim 25, wherein only receiver devices and all 1-hop neighbor devices of receiver devices perform the including to include the reservation <u>information element</u> IE in the beacon frame.

32. (currently amended) The method of claim 25, wherein the sender device, receiver devices, and all 1-hop neighbor devices of the sender device and receiver devices perform the including to include the reservation <u>information element</u> IE in a beacon frame.

33. (previously presented) The method of claim 27, further comprising the receiver device of a reservation performing:

in case of a Soft Reservation, starting an own transmission if the sender device does not use the reserved time;

in case of a Hard Reservation, not accessing the medium if the sender device of the planned transmission does not use the reserved time; and

in case of a Beacon Period Reservation, reserving the time for beacon transmission only.

34. (canceled)

35. (currently amended) A wireless device that reserves ~~the~~ a medium in a distributed manner, comprising:

an antenna for sending and receiving messages over a wireless medium;

a receiver coupled to the antenna to receive messages transmitted over the wireless medium;

a transmitter coupled to the antenna to transmit messages over the wireless medium;

a distributed reservation processing module to perform distributed reservation of the medium;

a processor to divide time into a sequence of at least one superframe, each said superframe having at least one beacon period that starts at a target Beacon Period Start Time (BPST) and includes at least one beacon slot, said beacon period being followed in the superframe by a data transmission phase, and coupled to:

the transmitter and the receiver to send and receive, respectively, beacon frames during said beacon period and data during said data transmission phase of the superframe,

the distributed reservation processing module to

manage beacon slot occupancy and data transmission phase reservations;

format a beacon frame for transmission in the at least
one beacon slot, such that the beacon frame includes a reservation of
the medium by the device for data transmission during the data
transmission phase, and

format a beacon frame for transmission in the at least
one beacon slot that responds to reservations received over the
medium.

36.   (previously presented)   The wireless device of claim 35, wherein:

each superframe further comprises a plurality of medium access slots allocated
between said beacon period and said data transmission phase;

and further comprising

a bitmap operably connected to said processor and arranged to have at
least one bit that corresponds to a slot of said plurality of medium access
slots, and

a memory operably connected to said processor and arranged to store a
reservation table of all planned reservations received or sent by the
device; and

said distributed reservation protocol (DRP) processing module further configured to
set and reset said at least one bit of said bitmap in accordance with
reservations of the medium for data transmission and beacon slot
occupancy, and

store and delete reservations sent and received by the device in the
reservation table of the memory.

37.   (currently amended)   A wireless device for distributed reservation of ~~the~~ a
medium, comprising:

an antenna for sending and receiving messages over a wireless medium;

a receiver coupled to the antenna to receive medium reservation messages
transmitted over the wireless medium;

a transmitter operatively coupled to the antenna to transmit medium reservation messages over the wireless medium;

a distributed reservation processing module to perform distributed reservation of the medium; and

a processor coupled to the distributed reservation processing module, a distributed reservation protocol (DRP) bitmap, and a memory including a DRP reservation table, said processor using the distributed reservation processing module, the DRP bitmap, and the DRP reservation table to divide time into a sequence of at least one superframe, and transmitting in the superframe at a target beacon transmission time (TBTT) a beacon frame that includes a reservation for a planned transmission by a sender device during the superframe.